

## REMARKS

Applicants appreciate the detailed examination of the present application and the extensive interview conducted with the Examiner on 26 January 2006. During that interview, applicants' representative and the Examiner discussed in detail the Mabuchi et al. reference (hereinafter "Mabuchi") and its applicability to the then claimed invention. The following is a brief summary of the respective positions taken by the Examiner and the applicants.

The Examiner was of the opinion that waveguide (34) in the Mabuchi patent included metallic sheet (33). This was contrary to the applicants' position that the waveguide consisted only of wave guide (34) and dielectric plate (32); the specification at column 1, lines 46-50 it is stated that "In the apparatus, the microwave is propagated flatly in the dielectric plate (32). Accordingly, it is possible for the apparatus to generate uniform plasma in a wide area by having a large dielectric plate (32) and a large microwave window." The undersigned emphasized to the Examiner that the specification in the noted patent described the function of dielectric plate (32) in terms of a waveguide, *i.e.*, directional propagation and confinement of the microwave energy through the dielectric material to accomplish the broad distribution pattern claimed to be beneficial to the invention. See, *id.* The undersigned further emphasized that the hollow (31) between the dielectric plate (32) and the reaction chamber window constituted a space which must be traversed by the radiated energy from dielectric plate (32), thereby approximating an antenna or emitter, contrary to the functioning of a waveguide, which must retain microwave energy presented therein. The undersigned further compared the existence of this space to the lack of a corresponding space in applicants' Fig. 1B, wherein a portion of the waveguide included holes and, optionally for claim 1 for example, shutters or energy modulating means. The Examiner countered that metallic sheet (33) may be nevertheless considered a waveguide: it is metallic and, therefore, functioned as a reflector, which is an attribute of a waveguide.

In addition, the Examiner and the undersigned briefly discussed upon the potential applicability of Japanese Patent Application Public Disclosure No. 8-111297 to at least claim 10. The undersigned agreed to solicit further commentary from the applicants in this regard.

After full consideration of both the referenced office action and the substance of the interview, applicants have amended the present application in a manner believed to render the Examiner's position moot with respect to Mabuchi. While applicants strenuously disagree with the Examiner's position referenced above, applicants have amended all independent claims to require that the wave guide define a homogeneous internal volume. The Examiner's characterization of Mabuchi's wave guide (34) requires that it include dielectric plate (32) and metallic sheet (33), as well as hollow (31). As such, the internal volume of wave guide (34) as characterized by the Examiner is clearly heterogeneous: it includes dielectric plate (32) and hollow (31). Dielectric plate (32) is disclosed as being a fluororesin, polyethylene, or polystyrene (column 5, lines 22-24), which is not the same as hollow (31), and which can only be characterized as a void. Thus, relying upon the Examiner's characterization of the "wave guide" of Mabuchi, the presently claimed invention is clearly not anticipated by Mabuchi. Importantly, it appears that dielectric plate (32) and hollow (31) are intrinsically required for functioning of the invention (no embodiments are shown or disclosed wherein both of these components are not present). Thus, there is no teaching or motivation to use a wave guide having a homogeneous internal volume.

Having established that Mabuchi is unavailable to support a rejection under 35 USC §102(b) with respect to claim 10, and unavailable as the primary reference supporting rejections to the remaining claims under 35 USC §103(a), applicants submit that the claims as presently constituted are allowable over the prior art of record.

Further to applicants' offer to provide additional insight into the applicability of Japanese Patent Application Public Disclosure No. 8-111297, applicants provide the

following. The invention of claim 10 recites both a dielectric member and at least one wave guide having a generally rectangular shape, as well as at least one hole formed in the at least one wave guide having a generally rectangular geometry. Moreover, and clearly distinct from the disclosure or teaching of the 8-111297 application publication, claim 10 requires that one side of the at least one hole is parallel to one side of the dielectric member. Given the physical configuration of the plasma processing apparatus of the 8-111297 application publication, this limitation is cannot be met or suggested.

In view of the foregoing differences between the claims as previously examined, and particularly as now amended, and the prior art of record, applicants submit that no valid basis exist for rejecting the pending claims. Moreover, applicants have further amended the claims, not to address issues of patentability, but to more clearly present the invention in view of certain translational artifacts not previously addressed. While the undersigned believes that upon entry of the noted amendments the application will be in condition for allowance, the Examiner is encouraged to contact the undersigned by telephone should additional matters benefit from further discussion.

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